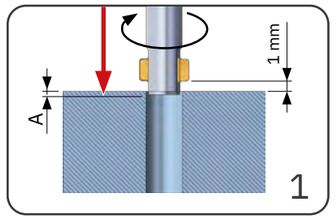
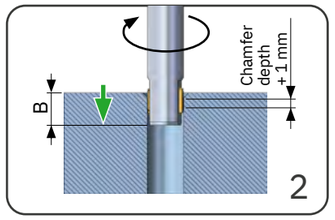
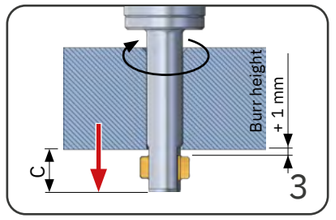
DEFA PROCESS STEPS



- Rapid feed to position **A** or 1.0 mm distance
- Spindle rotation clockwise
- External coolant on



- Working feed to position **B** or chamfer depth + 1.0 mm



- Rapid traverse to position **C** or burr height + 1.0 mm

Example

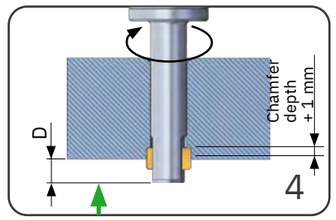
```
G0 Z-2.0
S579 M3
M8
```

```
G1 Z-6.0[1] F17
```

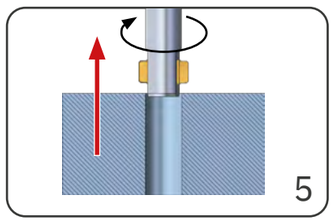
[1] 6.0=3.0+(6.0/2)

```
G0 Z-26.5[2]
```

[2] 26.5=16.5+3.0+6.0+1.0



- Working feed to position **D** or chamfer depth + 1.0 mm



- Rapid feed out of the workpiece

```
G1 Z-22.5[3]
```

```
G0 Z+2.0
```

[3] 22.5=16.5+3.0+(6.0/2)

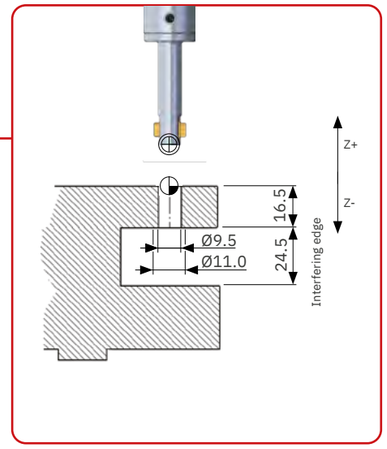
DIMENSION TABLE FOR PROGRAMMING

Tool	A mm	B mm	C mm	D mm
DEFA 4–6	0.8	3.4	6.0	3.4
DEFA 6–10	0.8	1.8+(0.5*K[1])	1.8+K[1]+1.0	1.8+(0.5*K[1])
DEFA 9–24	2.0	3.0+(0.5*K[2])	3.0+K[2]+1.0	3.0+(0.5*K[2])

[1] Dimensions for K, see tool table page 114
[2] Dimensions for K, see tool table page 116

The cutting data listed are guide values! For materials that are difficult to machine or uneven bore edges, we recommend applying cutting speeds that are at the lower end of the range.

APPLICATION AND PROGRAMMING EXAMPLE



Application data

Workpiece height:	16.5 mm
Bore diameter:	Ø9.5 mm
Chamfer diameter:	Ø11.0 mm
Material:	Titanium
Machining:	both bore edges

Tool and blade selection

Tool:	GH-S-D-1747 (DEFA 9-24)
Tool diameter:	Ø8.8 mm
Chamfer diameter range:	Ø10.2–11.4 mm
Working length:	30.0 mm (note interfering edge)
Blade:	GH-S-M-3912 (carbide, TiN coated)
Setting diameter D2:	D+2S = 11.0 mm + 2(0.4) = 11.8 mm
K:	6.0 mm (see page 116)

Cutting data

Cutting speed V_c:	10–20 m/min.
Tool working feed:	0.02–0.04 mm/rev.

CUTTING DATA

	Description	Tensile str. RM (MPa)	Hardness (HB)	Hardn. (HRC)	DF geometry			DR geometry		
					VC	FZ	B*	VC	FZ	B*
P0	Low-carbon steel, long-chipping, C <0.25%	<530	<125	–	40–70	0.02–0.06	T	40–70	0.05–0.1	A
P1	Low-carbon steel, short-chipping, C <0.25%	<530	<125	–	40–70	0.02–0.06	T	40–70	0.05–0.1	A
P2	Steel with carbon content C >0.25%	>530	<220	<25	40–70	0.02–0.06	T	40–70	0.05–0.1	A
P3	Alloy steel and tool steel, C >0.25%	600–850	<330	<35	20–50	0.02–0.06	T	20–50	0.05–0.1	A
P4	Alloy steel and tool steel, C >0.25%	850–1400	340–450	35–48	20–50	0.02–0.06	T	20–50	0.05–0.1	A
P5	Ferritic, martensitic and stainless PH steel	600–900	<330	<35	15–30	0.02–0.04	T	15–30	0.02–0.06	A
P6	High-strength ferritic, martensitic and PH stainless steel	900–1350	350–450	35–48	15–30	0.02–0.04	T	15–30	0.02–0.06	A
M1	Austenitic stainless steel	<600	130–200	–	10–20	0.02–0.04	T	10–20	0.02–0.06	A
M2	High-strength austenitic stainless steel	600–800	150–230	<25	10–20	0.02–0.04	T	10–20	0.02–0.06	A
M3	Duplex stainless steel	<800	135–275	<30	10–20	0.02–0.04	T	10–20	0.02–0.06	A
K1	Cast iron	125–500	120–290	<32	50–90	0.02–0.06	T	50–90	0.05–0.1	A
K2	Ductile cast iron with up to medium strength	<600	130–260	<28	40–70	0.02–0.06	T	40–70	0.05–0.1	A
K3	High-strength cast iron and bainitic cast iron	>600	180–350	<43	40–70	0.02–0.06	T	40–70	0.05–0.1	A
N1	Wrought aluminium alloys	–	–	–	–	–		–	–	
N2	Aluminium alloys with low Si content	–	–	–	–	–		–	–	
N3	Aluminium alloys with high Si content	–	–	–	–	–		–	–	
N4	Copper, brass and zinc base	–	–	–	–	–		–	–	
S1	Iron-based heat-resistant alloys	500–1200	160–260	25–48	10–20	0.02–0.04	T	10–20	0.02–0.06	A
S2	Cobalt-based heat-resistant alloys	1000–1450	250–450	25–48	10–20	0.02–0.04	T	10–20	0.02–0.06	A
S3	Nickel-based heat-resistant alloys	600–1700	160–450	<48	10–20	0.02–0.04	T	10–20	0.02–0.06	A
S4	Titanium and titanium alloys	900–1600	300–400	33–48	10–20	0.02–0.04	T	10–20	0.02–0.06	A

* coating for blades